

Water Resources Center

Annual Technical Report

FY 1998

Introduction

Research Program

Information Transfer Program

N/A

USGS Internship Program

Student Support

| Student Support | | | | | |
|-----------------|------------------------|------------------------|----------------------|---------------------|-------|
| Category | Section 104 Base Grant | Section 104 RCGP Award | NIWR-USGS Internship | Supplemental Awards | Total |
| Undergraduate | 1 | N/A | N/A | N/A | 1 |
| Masters | 1 | N/A | N/A | N/A | 1 |
| Ph.D. | 1 | N/A | N/A | N/A | 1 |
| Post-Doc. | N/A | N/A | N/A | N/A | N/A |
| Total | 3 | N/A | N/A | N/A | 3 |

Awards & Achievements

Patricia Holden and Arturo Keller of the Santa Barbara Campus have obtained additional funding from the U.S. EPA Bioavailability Research Program jointly administered by the U.S. EPA/ONR/DOE) to expand the work their project W-904 A Microscale Approach to Simulating Seasonal Bioavailability Constraints on Intrinsic Biodegradation into modeling vadose zone field data collected from Port Hueneme, California and other National Environmental Test Sites. The statistical tools developed in project W-887 by Richard Howitt of the Davis Campus, will be further applied to pollution control in the Navarro River Watershed located in Mendocino County, California. This work will be conducted in cooperation with the John Muir Institute for the Environment, University of California, Davis. This subsequent research will further illustrate the usefulness of the entropy approach to statistical inference which will help to better understand the impact of varying land use practices on nonpoint source water pollution. Project W-894 by Jeffrey Mount of the Davis Campus, which emphasizes the habitat impacts of changes in coarse sediment supply, has secured additional funding from the California

Department of Parks and Recreation to develop coarse sediment monitoring protocols within tributaries of the Yuba River. The methodologies developed for these studies are currently being tested by the United States Forest Service in the Tahoe National Forest for possible protocols for assessing cumulative watershed impacts on Forest Service lands. In addition, the methodology developed for this research is being applied to establish a geomorphic monitoring protocol for Deer Creek, Nevada County. The protocols will ultimately be taught to members of Friends of Deer Creek for a citizen monitoring program. The information that has been assembled about the distribution and impacts of the Chinese mitten crab from 1992-1998 in project W-881 by Vincent Resh of the Berkeley Campus, is among the best documentation available about the expansion of an introduced aquatic species during its invasion phase. This information has been presented to several agencies and organizations in order to educate and inform them regarding mitten crab management decisions. The project worked during the past year with the Interagency Ecological Project's Chinese mitten crab Project Work Team, contributing information from this research to the efforts of this team to design a working management plan for the Chinese mitten crab in California. The project also used this research to provide a scientific basis for the U.S. Fish and Wildlife Service's creation of a Mitten Crab Management Plan that will be presented to the National Aquatic Nuisance Species Task Force. This information can be used to further the understanding of aquatic invasions and make informed management decisions regarding possible control of introduced species. Data collected during project W-882 by David Sedlak of the Berkeley Campus, have been instrumental in obtaining additional funding from AWWARF for a grant titled "Occurrence Survey of Pharmaceutically Active Compounds." Research is continuing led by Sedlak on the fate of hormones in the aquatic environment with funding from the National Science Foundation. Support for an undergraduate for the next four years has been provided. Project W-890 by Constantinos V. Chrysikopoulos resulted in a publication printed in an international journal. Sim, Y, Chrysikopoulos, V.C. 1999. "Analytical models for virus adsorption and inactivation in unsaturated porous media." In: Colloids and Surfaces. A: Physicochemical and Engineering Aspects 155 189-197. A.T.Chow, a student in the Department of Land, Air, and Water Resources, UC Davis has won several awards for his work on dissolved organic carbon and trihalomethane production of cultivated peat soils. The work was funded through the competitive grants program of the California Water Resources Center, Kenneth K. Tanji, Principal Investigator. The awards are: Chow, A.T. 1999. Dissolved Organic Carbon (DOC) and Trihalomethane (THM) Production of Cultivated Peat Soils in the Sacramento - San Joaquin Delta, CA. Certificate of Merit - First place student paper from the Western Society of Soil Science. 80th Annual Meeting of the AAAS: PD, 19-23 June. San Francisco, California. Chow, A.T. 1999. Dissolved Organic Carbon (DOC) and Trihalomethane (THM) Production of Cultivated Peat Soils in the Sacramento - San Joaquin Delta, CA. Laurence M. Klauber Award for Excellence in student paper. 80th Annual Meeting of the AAAS: PD, 19-23 June. San Francisco, California. Chow, A.T. 1999. Dissolved Organic Carbon (DOC) and Trihalomethane (THM) Production of Cultivated Peat Soils in the Sacramento - San Joaquin Delta, CA. AAAS-Robert I. Larus Travel Award for the Year 2000 annual meeting of AAAS in Washington D.C. 17-22 February 2000 for excellence in student paper. 80th Annual Meeting of the AAAS:PD, 19-23 June. San Francisco, California.

Publications from Prior Projects

Articles in Refereed Scientific Journals

Book Chapters

Dissertations

Water Resources Research Institute Reports

Conference Proceedings

Other Publications

Woled, J., editor. 1998. Water Resources Center Annual Report, July 1, 1997 - September 30, 1998. Water Resources Center Report No. 96. 88 p. DeVries, J. J., and Woled, J., editors. 1998. Ground Water and Future Supply: Proceedings of the Twenty-First Biennial Ground Water Conference. Water Resources Center Report No. 95. University of California, Davis. 268 p.